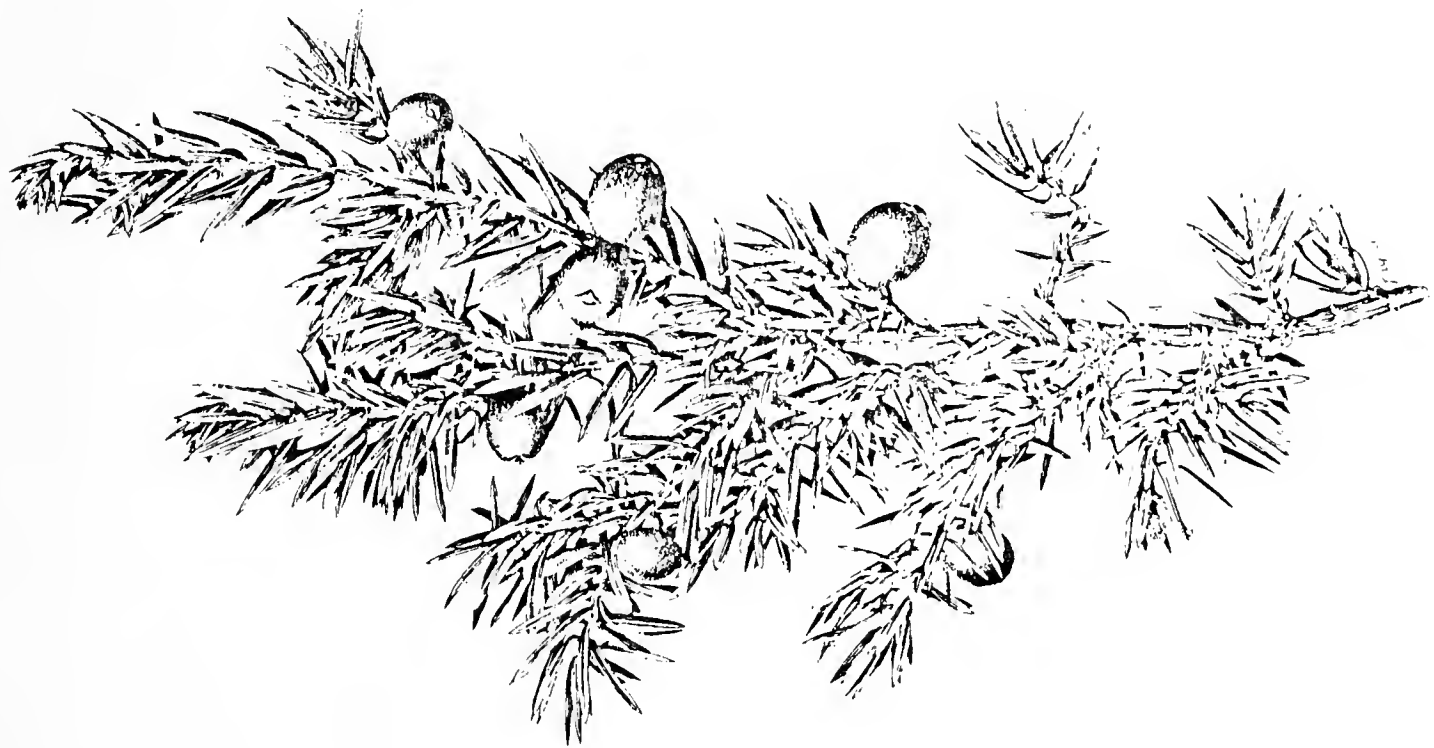


Horticulture Northwest

Journal of the Northwest Ornamental Horticultural Society



Juniperus communis

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Horticulture Northwest

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Sallie D. Allen, Editor

We welcome original articles, artwork and black and white photographs from contributors. Back issues of the Journal are available to members at \$2.50 each.

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Cover Illustration:

Juniperus communis

from Trees and Shrubs of Alaska (see page 80 for book review).



New Thoughts On Staking Trees

Dr. James R. Clark
Center for Urban Horticulture
University of Washington

Horticultural traditions die hard. It's not easy to give up a practice or technique we have used for many years. I would like to put to rest one such practice -- that of rigidly staking newly transplanted trees.

Although we have long believed rigid staking benefits the tree and enhances root system development, there is convincing research which proves this is not the case. When the growth and development of unstaked trees was compared to that of staked trees, the unstaked trees:

- were shorter in height,
- developed larger root systems,
- received less stress across the trunk,
- developed greater trunk taper,
- developed a larger trunk at the base.

In summary, tree establishment, growth, and overall development are not enhanced by rigid staking. Trunk and crown movement of a newly transplanted tree is actually beneficial.

Research results such as these suggest we change our staking practices to include:

- (1) Stake only when necessary - to provide anchorage and protection.
- (2) Make the stakes as short as possible - just high enough to hold the tree upright.
- (3) Support the trunk at one level only - near the top of the stakes.
- (4) Provide for movement of the trunk - the trunk should not be rigidly held.
- (5) Remove the stakes as soon as possible, preferably within one year.

While contrary to our long-held beliefs, these new ideas are derived from careful experimentation. An excellent source of information on staking trees is "Staking Landscape Trees, " University of California Leaflet 2576, 1976. It can be obtained by writing to: Extension Ornamental Horticulturist, Department of Environmental Horticulture, University of California, Davis, California, 95616.

Leptospermum Scoparium

Brian Halliwell, Royal Botanic Garden, Kew, England

Leptospermum scoparium is to be found in the states of south-eastern Australia and in New Zealand. In the former country it acquired the common name of tea tree because its dried leaves were used by early settlers as a substitute for tea whilst in New Zealand it is called Manuka which is a Maori name; both common names seem to be interchangeable. Widespread in both countries from sea level to sub-alpine scrub, it can vary from being prostrate to a small tree, 20 feet or more in height. There seem to a number of forms to which botanists have given various varietal names but whose standing seems to change. In Curtis's Botanical Magazine of 1835 was depicted *L.s grandiflorum* which had large flowers flushed with pink whereas white is the more usual; this name seems no longer valid. *L.s eximium*, also featured in the Botanical Magazine, in 1939, is endemic to Tasmania and is of upright growth with stout branches and large white flowers. In the Manual of New Zealand Flora by Cheeseman, 1906, there are four varieties whereas in Allan's Flora of New Zealand of 1961 there is only one; *L.s incanum*, which occurs in the north of the North Island, has narrow silky grey leaves and pinkish flowers.

Leptospermum scoparium was taken into New Zealand gardens by early settlers for hedging plants and as flowering shrubs. Although white flowers were produced profusely in late spring, no great merit was attached to the plant. When coloured flowered forms began to appear they began to attract attention and found their way in increasing numbers into gardens. The first of these seems to have been the rose-coloured 'Chapmanii' which was discovered and introduced to cultivation in New Zealand by Sir Frederick Chapman in 1889. The most important of all coloured flower forms, 'Nichollsii,' was introduced in about 1905. A Mr. William Nicholls, a woolbuyer, was visiting a sheep station at Belfast in the South Island of New Zealand when he saw a bush of Manuka with rose-red flowers. He collected a sprig for a button hole which was seen by Robert Nairn, a well-known Christchurch nurseryman, who begged the sprig hoping to be able to root it. In this he failed, but on the sprig were some seed capsules from which seed was extracted and sown and it was one of the resulting seedlings which was chosen by Mr. Nicholls to bear his name. 'Nichollsii' is described as having flowers which are crimson and since its introduction there have been other forms introduced with larger or richer coloured flowers: 'Nichollsii Grandiflora,' 'Nichollsii Gloriosa,' 'Nichollsii Magnifica' and 'Nichollsii Improved.' Seed from 'Nichollsii' when sown has produced seedlings with flower colours ranging through pinks and reds. Nurserymen have continued to select seedlings from not only 'Nichollsii' but also from the pinks and reds. Nurserymen have continued to select seedlings from not only 'Nichollsii' but also from the pink variety, *incanum*, to which cv. names have been given.

Amongst these have been the occasional bush with double flowers. In 1939 in California, Doctor W. E. Lammerts crossed a double rose form with 'Nichollsii' to produce seedlings of varying colours but all were with single flowers. Seed was collected from this first generation and sown and in the second there were many with double flowers. The best of these were selected and named e.g. 'Red Damask,' 'Ruby Glow,' and distribution began in 1946 quickly spreading to warmer countries including New Zealand.



Illustration: *Leptospermum scoparium*

In the early nineteen fifties, the New Zealand nursery of Duncan and Davies introduced a group of cvs. named after New Zealand birds which were dwarf in habit. At about the same time there appeared in a British garden a cv. to which the name 'Nichollsii Nanum' was given. The latter had the flower colour of 'Nichollsii' and in the former group there was a range of colours, but all had young foliage which was reddish. L. Metcalfe in The Cultivation of New Zealand Trees and Shrubs, 1972, R. Harrison in Handbook of Trees and Shrubs for the Southern Hemisphere, 1963 and Bean, in 8th edition of Trees and Shrubs Hardy in the British Isles, 1973, all record a cv. 'Nanum' but in each there is a difference in flower colour although all mention reddish young foliage. Seedlings raised from 'Nichollsii Nanum' and 'Nanum' all retain the dwarf habit but produce a range of flower colours.

Today there is a large number of named cvs. of varying habit, flower form and colour. R. Harrison in Handbook of Trees and Shrubs for the Southern Hemisphere lists 23, Metcalfe in The Cultivation of New Zealand Trees and Shrubs has 29, Duncan & Davies catalogue of 1962 listed 17, Hilliers Manual has 10, Bean's Trees and Shrubs Hardy in the British Isles, 11. It never seems to have gained the same kind of popularity in the United States for in the standard Cyclopaedia of Horticulture by L. H. Bailey, 1927, there are only 4. In Monravia nursery catalogue of 1963, 4, and in Hortus Third of 1976, 9.

Late spring is the usual time for flowering and summer blooming is not uncommon whilst intermittent flowering can continue into fall. In New Zealand 'Rose Gem' is recorded as often being a winter flowerer as can be 'Keatleyi' and 'Sandersii.' In the United States it is a plant for region VII of VIII. It will tolerate frost as long as it is not severe and the ground does not freeze. The hardiest of all forms seems to be that called *Leptospermum scoparium prostratum*. Under this name there seems to be a number of different plants which have varying habits, degrees of hardiness, freedom of flowering and flower size. This plant will stand temperatures as low as 10°F. and probably lower. Those within the 'Nanum' group seem next in hardiness rating, standing temperatures not quite as low as the former. Next comes the white flowered species, followed by the single coloured flower forms and least hardy of all are the doubles which will stand only a few degrees of frost.

Perhaps if the hardy *Leptospermum scoparium prostratum* was crossed with 'Nichollsii' or some other coloured flower form, a race of attractive but hardier plants would be the result.

Prayer of An Opinionated Gardener

Oh Lord, grant me the forbearance when visiting my friend's garden and listening to continuing absurd praises for plants I don't like and prejudice against the plants I do, to utter not the contentious word. And when my friend comes to visit me, let the poor benighted soul see at long last that my own taste in plants is impeccable and my use of them surely guided by heaven. Amen.

George Schenk, Kirkland, Washington - Auckland, New Zealand

Did You Know?

Betty Carey Miller, Seattle, Washington

The meat of our educational efforts, the NOHS Lecture Series, is designed for you if you ever plant a plant. Do you know that if a plant likes morning sun and afternoon shade it may not like morning shade and afternoon sun? Or why? You know that drainage is important but do you know why and the many ways of providing it? The web of root systems under a thick planting creates a ceiling which directs the rodent runs to a lower level, and this is one method of providing a good natural drainage system. Ground covers should be planted extensively. They can eliminate weeds, provide natural processing of the soil, and prevent the freezing or drying out of the plant roots. Some ground covers are much more serviceable than others and add beauty. Why would you want bare ground anyway when you can plant an attractive ground cover to walk on and at the same time be able to eliminate considerable weeding and mulching?

Root rot is a primary cause of plant mortality in the Northwest and commonly caused by poor drainage. If your plant looks unhappy, do you run for fertilizer or give it more water? Both are wrong if it has root rot, which is so rarely recognized. Fertilizer will force a plant to produce more lush top growth temporarily which the damaged roots cannot support and which will weaken the plant further in the long run. Also, if the crown of the roots is below soil level, root rot will surely be on its way and is incurable.

Why do leaves curl or drop in cold or hot weather extremes? Leave them alone. This is a mode of self-protection in limiting the exposure of the leaf to the weather. Every plant is going to do its level best to survive. It has evolved for survival and it possibly knows more about it than you do. Have confidence in its natural mechanism. (Do you know how to prepare a planting site providing the essential needs in order that the plant can thrive on its own?)

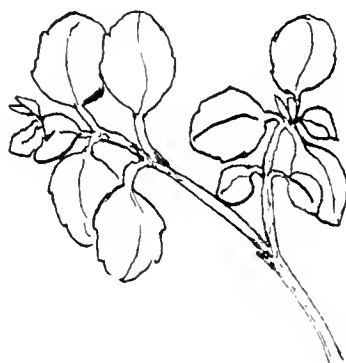
Do you know that Seattle is one of the few (if any other) major cities developed on glacial strata? This means layers of hard clay which creates serious drainage and slippage problems. However, clay contains nutrients which are beneficial to a plant if they are made available. Knowing how to use it is an asset. And mulches: Some are good for sunny exposures and very bad in shade, or vice versa. The importance to a plant's roots of the natural biological activity of the thousands of forms of life in your soil should be stressed. Do not rob the plant by sterilizing the activity in the soil.

To arrive at less maintenance, do more planning and thinking before planting. This also explains the practical trend toward growing species plants. After all, in their native habitat no one every fertilizes, sprays or waters them and they can reproduce themselves genetically. Not so with the hybrids of our garden ornamentals. The genetics are lost in the process, which is why their seed is unreliable and in many cases the beauty of the form of the plant is lost as it is hybridized for bigger and better (?) flowers. (Do you know what a species plant is?) It is true that there are many desirable hybrids and this is a matter of the gardener's personal preference. In any case, most garden hybrids are more dependent on your support and are much less insect resistant.

Just be careful when you use insecticides not to upset the insect balance around a neighboring species plant if it has not been attacked. Don't control a pest if it isn't a problem. There are always exceptions to the rule and, of course, many different concepts of what a beautiful plant should look like. Then, too, the joy of gardening should be watching rather than laboring over the healthy growth of your plants. More easily achieved as you learn to "read" your own garden in the terms previously mentioned, which give you an understanding of what makes it tick. No two gardens have identical existing conditions. There are as many as 90 different microclimates in the average town garden. Do you know what a microclimate is or why it helps you to know? Some plants can tolerate stagnant air pockets in your garden and others cannot. The same is true of plant tolerance for wind factors.

Are lichen, moss and fungi harmful? Some are and some are beneficial. Don't begrudge a morsel from your choice foliage plant for the survival of the good insects. Do birds take their toll of our good insects? Does anyone know? Pruning is a must to learn more about. If improperly done, harmful micro-organisms can enter and can cause a slow mortality not affected by any amount of spraying. Pruning at one time makes a plant more vigorous and another time more dwarfed. Did you know that the oak leaves are a better winter mulch in the west than the beech or native maple leaves, which turn into a slimy mush from our winter rains and harbour slugs?

The Lecture Series is our means of covering all these subjects for the gardener's benefit and many more, such as landscaping and which plants are tolerant of environmental stress. The lectures also support the increasing awareness of horticulture in serving the needs of human welfare. Supporting organizations are: King County Co-Operative Extension Service, Lake Washington Garden Club, The Seattle Garden Club, The Tacoma Garden Club, Unit Council of the Arboretum Foundation, and the Washington State Federation of Garden Clubs.



H.B. Tukey, Jr., Director of the Center for Urban Horticulture at the University of Washington, was elected president of the International Society for Horticultural Science at the recent Congress in Hamburg, West Germany. Tukey will serve a four-year term ending in 1986 with the XXII International Horticultural Congress at the University of California at Davis. ISHS has more than 2000 members with representatives from 70 countries on its governing Council. It sponsors numerous symposia in all parts of the world on research problems of production and utilization of horticultural plants as well as an International Congress every four years.

Our congratulations to Doctor Tukey as this is fine recognition for horticulture in the Pacific Northwest and for the new program in Urban Horticulture.

Goodbye to the Rose Covered Cottage

George Schenk, Kirkland, Washington - Auckland, New Zealand

Look down at the Pacific Northwest from an airplane five miles high. In spite of extensive clearing to make way for the megalopolis that grows to unite Vancouver, Seattle, and Portland, the land remains predominantly dark with trees to the waters' edge. As in the Atlantic Seaboard states, any piece of open, fallow ground in the Pacific Northwest - the stumped woods, the vacant lot, the abandoned farm - becomes a thriving tree and shrub nursery self-sown. In no time, in a wink of seasons, the native plants grow into secondary or tertiary forest. Lately we've developed a regional style of building and gardening in the Northwest based on the fact, long-begrudged, that we live in forested country, perhaps no longer the forest primeval, but the forest revenant.

During the early decades of this century, most of the region's houses and gardens scorned the all-too-willing woods. We looked to England for style. Circa 1935, many of our dream houses suggested, by means of carpenters' and plasterers' magic, the plump curves of thatched cottages in the Cotswolds. The garden that went with the house was a quilt of open lawn with cut-out beds for shrubs and flowers. For shade, one sat in style within a lath-work pergola. I remember it all fondly. Not a bad life that, though oddly plonked upon the foresty Northwest.

Since the Second World War we've been at work on something more our own. As cities have extended suburbanly into the woods, local architects, landscapists, garden writers, and home gardeners (in every permutation of leadership and followership, I should think) have established a Northwest Style savingly in love with woods: we've become more respectful of our native verdure now that we have visions of the manifest destiny of concrete. In our regional style the characteristic house is built of wood which displays the grain - wood stained rather than painted, or left raw to invite the patina of weather. The compatible garden may be nothing more than the existing woods, the homeowners apprising them as the perfect picture. Other homeowners lucky enough to be located in the midst of healthy native vegetation clear their woods somewhat and add foreign plants to the clearings, all under the high shade of trees that have been spared selectively.

But of course most new houses are turned out by developers in the manner turtles lay eggs--in a bunch. When the housing development is laid in a wooded setting, the woods are nearly always decimated to allow the tight fit of buildings in the land. Occasional tree clusters or lone trees are left standing, along with woodland undergrowth immediately beneath the trees. Too often the garden planted on the lot measured into such a place is an uncomfortable compromise, a vestige of forest with roses and petunias as underplanting. More satisfactory is the created woodland: the bare or nearly bare lot turned into believable groves by a gardener who understands nature.

These variously wooded gardens amount to more pure or less fortunate versions of the Northwest Style. The garden features which define the style, separating it from the cottage garden of the earlier Twentieth Century, are more trees and tree shadows; fewer flowers; less grass lawn; more ground covers in

place of flowers and lawn. The grass lawn, beloved of English gardening, is reduced in the Northwest Style - narrowed, perhaps, to a green stream leading through woodsy plantings. Or grass is eliminated from the garden. Wood by-products join the ground covers in taking the place of grass: tree bark, chipped wood, or sawdust, used on pathways and plant beds alike.

In the thousands of manifestations of the Northwestern garden style, at homes, schools, libraries, offices, gas stations, city parks and parklets, many abuses occur as one would expect with a popular art. Bark chips tend to spill out onto the sidewalk; the beholder might wish more ground were devoted to the old-fashioned soothing spread of lawn, and less to the ocular roughage of tam juniper, ivy, and zabel laurel; one might wish these away altogether simply because they are exotics less honest in the circumstances than salal. Yet this regional art of ours at its best is strong and valid in the geographical setting. It is also ubiquitous. The Style surrounds us: house and garden of plain wood as building material and woods as proper surroundings.

There is no news in all this - but a toast to being more ourselves.

Welcome!

Three new faces have joined the staff of the Center for Urban Horticulture at the University of Washington. William Halstead is the Greenhouse Supervisor. He will be supervising and coordinating the activities in the greenhouse as well as the new nursery and research area at Union Bay. Mr. Halstead is a graduate of the University of Washington and Edmonds Community College. He has experience in greenhouse and nursery operations as well as private gardens.

Fred Hoyt is the new Gardener-Lead at the Washington Park Arboretum. He holds a B.S. in Plant Science (landscape horticulture) from the University of Idaho, Moscow. He has worked in various horticultural positions with the University of Idaho, the city of Moscow, and private nurseries.

Van Michael Bobbitt has recently joined the staff of the Center for Urban Horticulture as Coordinator of Continuing Education and Public Service. He will be assisting in the development and expansion of programs with audiences primarily in the public education sector.

A native of Washington, Mr. Bobbitt graduated from Central Washington State College, Ellensburg, with a B.A. in Botany, followed by an M.S. in Agriculture (Horticulture) from California Polytechnic State University. As part of his graduate program, he worked in the student intern program with docents on the Strybing Arboretum, San Francisco.

Mr. Bobbitt was most recently a sales representative for the Charles H. Lilly Company in the Seattle area. Previously he was Education Coordinator and Botanist for the Sherman Library and Gardens in Corona del Mar, California where he had extensive experience in organizing educational programs through tours, workshops, schools, and publications.

Congratulations Marvin Black

The handsome walnut plaque with bronze plates hangs in his City Hall office. The top of the two plates bears the logo design of an urban family in a city setting of trees, birds and tall buildings. The lower plate is inscribed:

URBAN FORESTRY AWARD presented to MARVIN E. BLACK
In recognition of meritorious leadership by a professional in advancing the concept of urban and community forestry in the United States, by The National Urban and Community Forestry Leaders Council and the American Forestry Association.
October 13, 1982.

Inaugurated this year, the Urban Forestry Award is given to one professional and one amateur in the United States. It also brings a \$500 honorarium.

Urban Forestry is a newer term, referring to a combination of the disciplines of arboriculture, forestry, landscape architecture, and others that come together to work with the trees in urban areas, which indeed are an urban forest with many forms and owners. Black is Seattle City Arborist employed by the Seattle Engineering Department.

In the past 15 years, Seattle has moved from a position of having no street tree program and an average park trees program to becoming one of the United States leaders in street trees and a more important role with park trees with the addition of important tree areas in Discovery Park, Freeway Park and smaller new parks which feature trees.

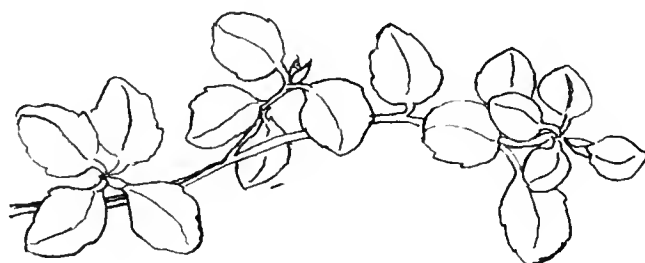
Seattle's booklet on city trees "Seattle's Urban Forest--an Owner's Manual" (available for \$1.50 at the Arboretum office) has color photos and lists of recommended and nonrecommended street trees, where to get help, and much other information. Produced jointly by the U.S. Forest Service, the Seattle Engineering Department, and the Washington State Department of Natural Resources, it is the most complete booklet of its kind. Many Seattle residents donated the design work and portions of the artwork and photography in the book. Black conceived the idea of Seattle producing such a book and served as technical advisor and photographer.

The Northwest Ornamental Horticultural Society and the Arboretum Foundation furnished a grant to jointly send Black to the international conference "Trees in the 21st Century" in Brighton, England, in 1980, where he was one of 33 delegates. He received this year's award at the Second National Urban Forestry Conference in Cincinnati, Ohio, where he was also a speaker, spotlighting Seattle's tree experience under the "Success Stories" section of the program.

Since 1980's Brighton conference, he has spoken on Trees in American Cities (with Seattle emphasis) at Kew Gardens in London, at Buffalo, New York (helping inaugurate the Green Downtown Buffalo movement, as he had earlier helped with Green Downtown Dayton), in Spokane (Society of American Foresters), Port Townsend (International Society of Arboriculture), Los

Angeles (Federated Garden Clubs of America) and elsewhere. His writing has appeared the past two years in eight different publications.

The Seattle Engineering Department will have a poster exhibit, beginning December 20th, featuring Seattle City Trees, with dozens of color photo enlargements (it is really an art-photography exhibit) in the 4th Avenue lobby of the Seattle Municipal Building. Mr. Black initialed the project and served as photographer.



Seed Exchange "Wish List"

I am sure we all have our own personal "wish lists" of long desired treasures to add to our gardens. We look hopefully each year in the various seed exchange lists and pour over the new garden catalogs when they arrive, sometimes finding the rarity, but often times not. Perhaps some of these plants are already growing in other members' gardens, or seed could be collected in the wild on plant-exploring vacations, if we only knew what particular species would be desired. With this in mind and in the hope of expanding our Seed Exchange List to include those things you are trying to find, we invite you to send in your "wish list" (limited to 10 items at any one time) and those received will be published on an on-going basis. Send your list to the Editor, Sallie D. Allen, 18540 26th Avenue Northeast, Seattle, Washington 98155.

"WISH LIST"

Mareen Kruckeberg:

Larix gmellini
Pseudolarix amabilis
Draba deadeana
Parrotia persica
Styrax wilsoni

Sylvia Duryee:

Primula reinii
Primula obliqua
Primula sonchifolia
Primula incisa
Primula bellidifolia

Majella Larochelle:

Androsace helvetica
Androsace tapete
Anemonopsis macrophylla
Campanula 'Joe Elliott'
Campanula morettiana
Campanula raineri
Campanula zoysii
Douglasia montana
Dionysia involucrata

Sallie Allen:

Pernettya alpina
Gaultheria hispidula
Trochocarpa thymifolia
Myrsine nummularia
Myrtus nummularia
Nertera balfouriana
Epacris alpina

N.O.H.S. NOTES

WINTER 1982

Supplement to the Horticulture Northwest

Shirley Gorman, Editor

President's Letter

Dear Members and Friends:

Winter is fast approaching and I am sure everyone is busy doing their fall planting. This year's N.O.H.S. Fall Plant Sale provided everyone with the most outstanding plant material. Jean Wilcox and her committee really did a wonderful job. It was a very colorful affair this year. Everyone enjoyed being indoors at Bellevue Square and we had a wonderful turnout from all of you. Congratulations to Jean, her committee, and everyone that worked for the sale for a job well done!!

The 1982 N.O.H.S. Lecture Series has come to a close. Alan Godlewski and Dr. Daniel Stuntz presented the last two lectures. N.O.H.S. looks forward to an outstanding list of lecturers for our 1983 Lecture Series entitled "Focus on Creative Gardens." The Lecture brochures will be out to you in December.

Happy holidays to you all!!

Sincerely,

Katherine Carey
President

KC/bls

WELCOME NEW MEMBERS

DANE, Mrs. Roger (Mary Anne) 148 Third Avenue, Kirkland 98033	
HANSEN, Mr. Scott A. (Laura B.) Route 1, Box 118A, Cashmere 98815	782-4233
ROBERTSON, Lain (Hady m de Jong) 4647 First Avenue N., Seattle 98105	632-6703
HARSH, Mr. Roy D. 9803 S.E. Shoreland Drive, Bellevue 98004	454-1304
HULBERT, Dorothy A. 16036 266th S.E., Issaquah 98027	
JONES, Mrs. Lewis R. 4 Forest Glen Lane, S.W., Tacoma 98498	588-7147
JOHNSON, Mrs. Richard A. (Margaret) 3104 Tahoma Place W., Tacoma 98466	564-2568
O'ROURKE, Mrs. Carroll (Pat) 12016 Nyanza Road, Tacoma 98499	584-2510
ROBBINS, Ann M. (Mrs. David) Route 1, Box 62, Lilliwaup 98555	877-5890
SANGUENETTI, Miss Mary Alice 5103 47th Avenue N.E., Seattle 98105	
VIK, Mrs. Bruce (Ethne) 3405 37th Avenue S., Seattle 98144	722-3165

COMING EVENTS

January or February 1983	N.O.H.S. SPECIAL EVENT LECTURE Russell Page, world renown landscape architect designer; details to be announced later in flyer.
January 26th February 23rd	ARBORETUM EXPLORERS' WALKS Two hours; meet at 10:00 a.m. at the office.
January 19th	10 a.m. to 12 noon: "Winter Twigs," Branching Patterns and Flowering Buds, Identifying Characteristics
February 9th	10 a.m. to 12 noon: "Barks of Trees and Shrubs," Professor and Curator Joseph Witt Plant Collection of Arbortum, University of Washington
January 8th February 5th March 12th	EDMONDS COMMUNITY COLLEGE 9 a.m. to 4:30 p.m., Weekend Seminars
January 8th	"Stress and Pleasure--Coping With the Modern World Through Gardening Activities."
February 5th	Adaption for Those With Special Needs.
March 12th	Survey of Horticulture Therapy Programs in the Northwest.
March 16th	10 a.m. to 12 noon, Slide Lecture, "Plants and People of West Africa."
January 27th February 24th March 24th	10 a.m. to 12 noon, Fourth Thursdays' Weeders. Meet at the Arboretum office.
March 9th	N.O.H.S. Lecture and Panel "Soil and Nutrition from a Roots Eye View," 10:30 a.m., McCurdy Room, Museum of History and Industry, 2161 East Hamlin. 1. "The Form and Growth of Roots," Professor James Clark, Center for Urban Horticulture, University of Washington. 2. "Roots Nutrition, Its Importance to the Total Plant." Professor Robert Zassoski, College of Forest Resources, University of Washington. 3. "Using My Knowledge of Root and Nutrition to Grow Better Plants." John Watt, Professor for Urban Horticulture, University of Washington.
April 20th	N.O.H.S. Garden Tour to Portland, Oregon to visit the Berry Botanic Garden, and to an outstanding private garden, \$45.00 including lunch.

NOHS Note Paper and Envelopes

Four distinctive botanical drawings

by Sally Dickman and
Maureen Kruckeberg

5-1/2" x 4-1/4"

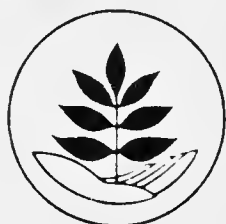
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Introducing *Linnaea Borealis* 'Tiffany'

Sallie D. Allen, Seattle, Washington

Who among us has not been enchanted by the dainty evergreen creeping shrublet, *Linnaea borealis* var. *longiflora*, commonly found in dense mats in coniferous forests at sea level in the Pacific Northwest? The two-inch flowering stems, forked at the tip, produce two soft pink delightfully fragrant flowers, giving rise to the common name of twinflower. They are funnel-shaped, narrow, two thirds of an inch long with five corolla lobes. The opposite leaves, up to an inch in length, are usually ovate, acute, prominently veined and shiny, with well separated nicks or teeth along the upper half, said to be the distinguishing factor for proper identification when not in bloom. It is a procumbent plant which sends out long, slender branches, an inch or more between the leaf pairs, rooting occasionally at the nodes. It branches from the axils of the leaves. (Fig. 1)

Linnaea borealis, a member of the honeysuckle family (Caprifoliaceae), was named in honor of the celebrated Swedish botanist Carl Linnaeus (1707-78) and said to be his favorite plant. It is circumboreal in distribution, occurring in the colder parts of the Northern Hemisphere; in western North America its range is from California to northern Alaska. *L. borealis* appears to be a variable plant throughout its worldwide distribution. In Europe and northern Alaska where the species occurs, it has shorter, bell-shaped flowers, one third inch long and somewhat ciliate leaves that are toothed and glossy. It is described as not only growing in woodland, but on heaths and dry mountain ridges. Two varieties may also be found in Alaska, *L. b. americana* in the far north and our *L. b. longiflora* which extends from this region to southeastern Alaska.

A small plant of *Linnaea borealis* var. *americana*, given to me this fall, was collected from 4,000 feet in Yukon Territory where it was found in a scree in a fully exposed position. Although we have not seen it in bloom, it is described as being similar to the species, but the corolla is more funnel-shaped, flaring from above the calyx. Its half-inch leathery leaves are ovate, deeply toothed, shiny, some reddish in color, some bronze and some dark green edged bronze. It is a delightful little plant that will be interesting to watch to see how it behaves in our lowland gardens.

Four years ago when in the Tiffany Mountain area of Okanogan County, we found a form of *Linnaea borealis* at approximately 7,000 feet elevation, growing in pure peat in sun, quite different from any we had previously seen. The plants were small, compact (not creeping), the leaves one fourth the size of *L. b.* var. *longiflora*, ovate to round in shape, without the identifying teeth along the upper half. Although leathery in texture, they lacked the lacquered appearance and the veining was not as pronounced. The charming soft pink flowers were more campanulate, narrow toward the calyx, and had five distinctly recurved corolla lobes. They were bright pink within and densely hairy. (Fig. 2)

We brought home several rooted bits and planted them in normal gritty, well-drained garden soil in an open situation that receives sun until early afternoon. They do tend to creep about although the foliage is much more

Fig. 1. *Linnaea borealis*
var. *longiflora*



Fig. 2. *Linnaea borealis* "Tiffany,"
growing in peat

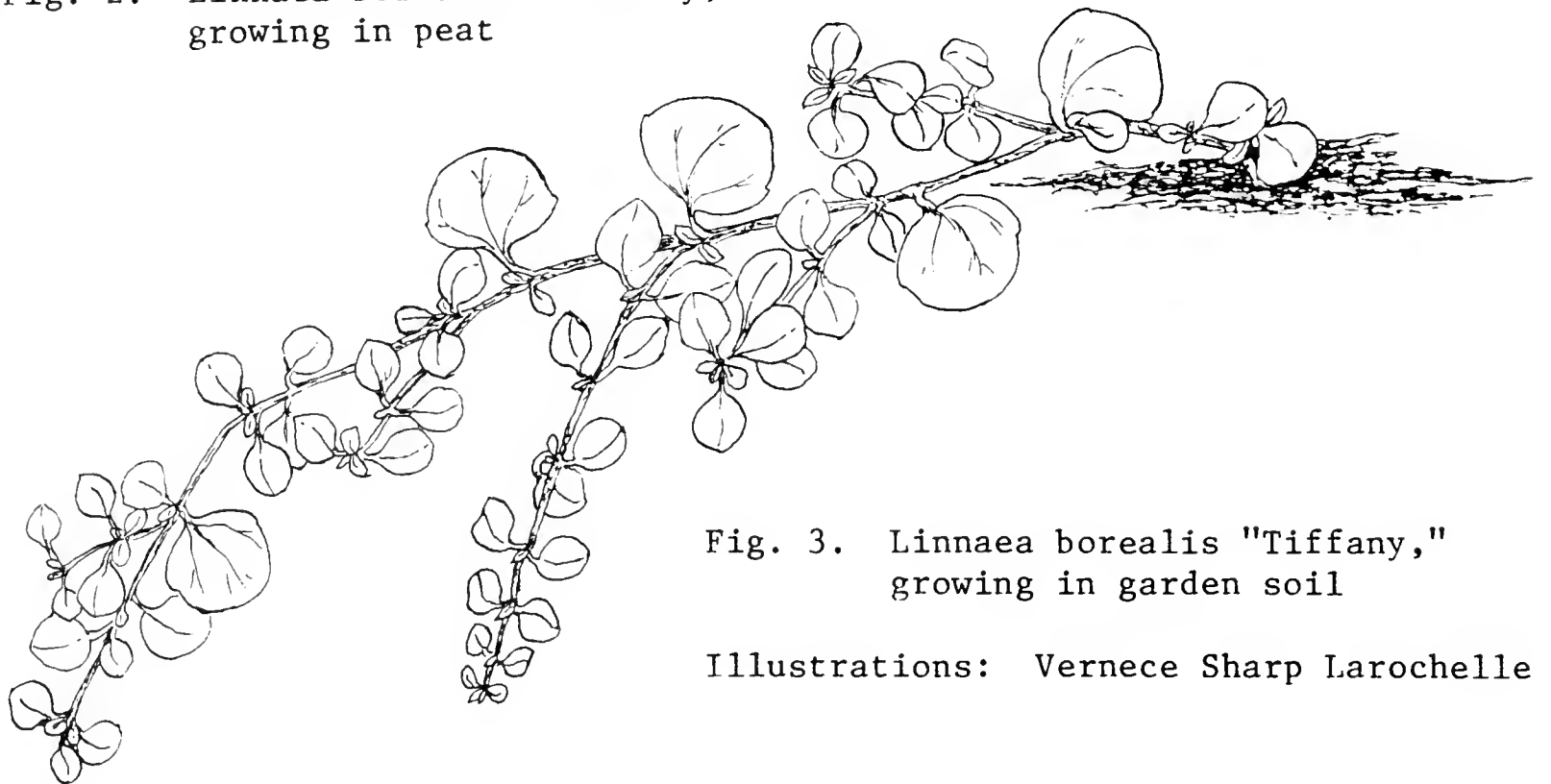
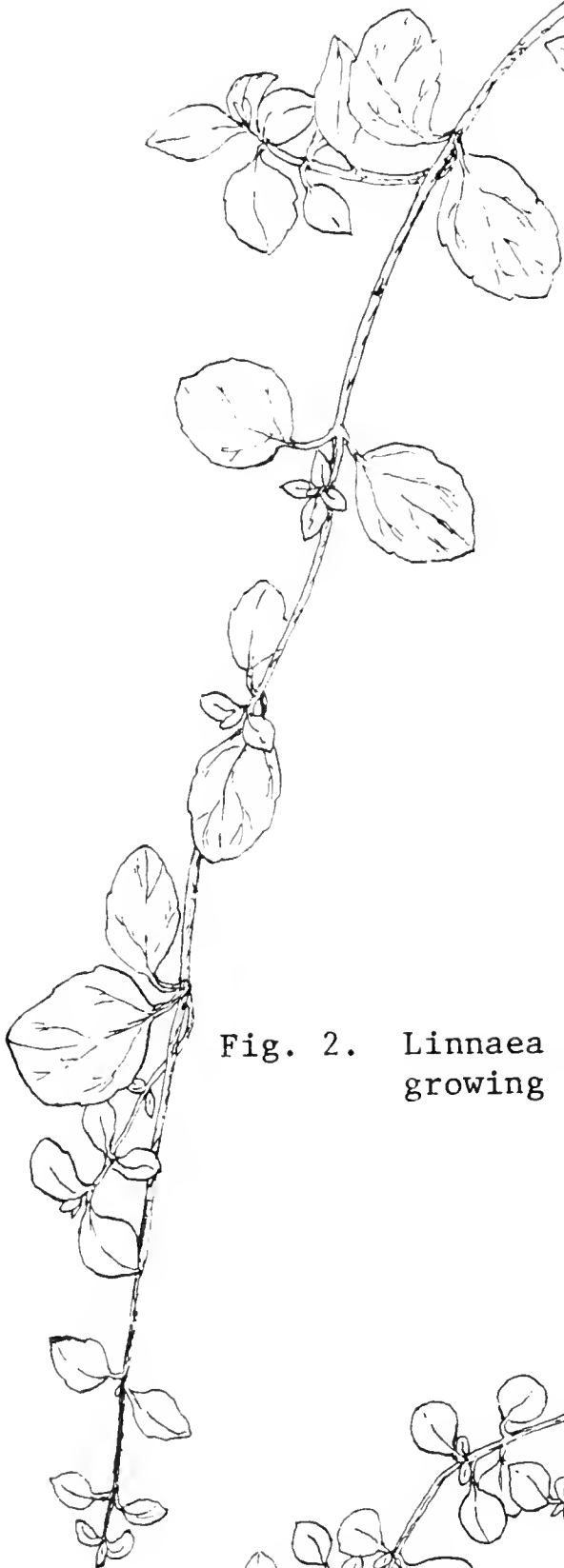


Fig. 3. *Linnaea borealis* "Tiffany,"
growing in garden soil

Illustrations: Vernece Sharp Larochele

closely arranged, rooting frequently, making them completely prostrate in habit. The leaves when young are tiny and orbicular, when mature round to suborbicular, one half inch across, with a single slight indentation on either side of the upper half, the color lighter green than our woodland plants. This fall some leaves have turned pleasantly bronze. We have planted a compact little plant in peat in a pot and will place it in an open garden position in the spring. Recent new growth has produced minute round leaves. (Fig. 3)

The thought had occurred to us that our Tiffany discovery might be typical of plants found east of the Cascades, although we had not previously paid particular attention to those growing at other elevations in the Okanogan. This question was resolved when we later found *Linnaea* up Eight Mile Creek, elevation 3,400 feet, in an open Ponderosa pine forest. It was possibly smaller in all of its parts due to the elevation, but could definitely be identified as *L. borealis* var. *longiflora*, as it had all of the typical leaf characteristics. An interesting sidelight which illustrates the importance of soil composition upon plant life, we found one small seedling plant, differing only in having a dwarf, compact habit of growth. In pushing away the pine needles, we discovered that it had only about one quarter inch of woodland duff; the soil in which the roots were embedded was a soft white glacial flour, without any humus whatsoever. (Fig. 4)

A thorough search of available literature was made, including western American, British and European floras, regional handbooks, wild flower publications, studying descriptions, distribution maps and comparing botanical drawings and colored photographs. Encouraged by a number of people who had seen our plant, we felt that our Tiffany *Linnaea* was sufficiently unique and deserving of a clonal name. We learned that Tiffany Mountain was "named for Will Tiffany, who with his two brothers, maintained a camp at the mountain's base. A close relative of the New York jewelry family, he was killed while serving with Teddy Roosevelt's Rough Riders in Cuba during the Spanish-American War."* Since the name Tiffany creates within the mind the vision of the ultimate in most precious jewels, we felt that it was entirely appropriate for the naming of our introduction, *Linnaea borealis* 'Tiffany.'

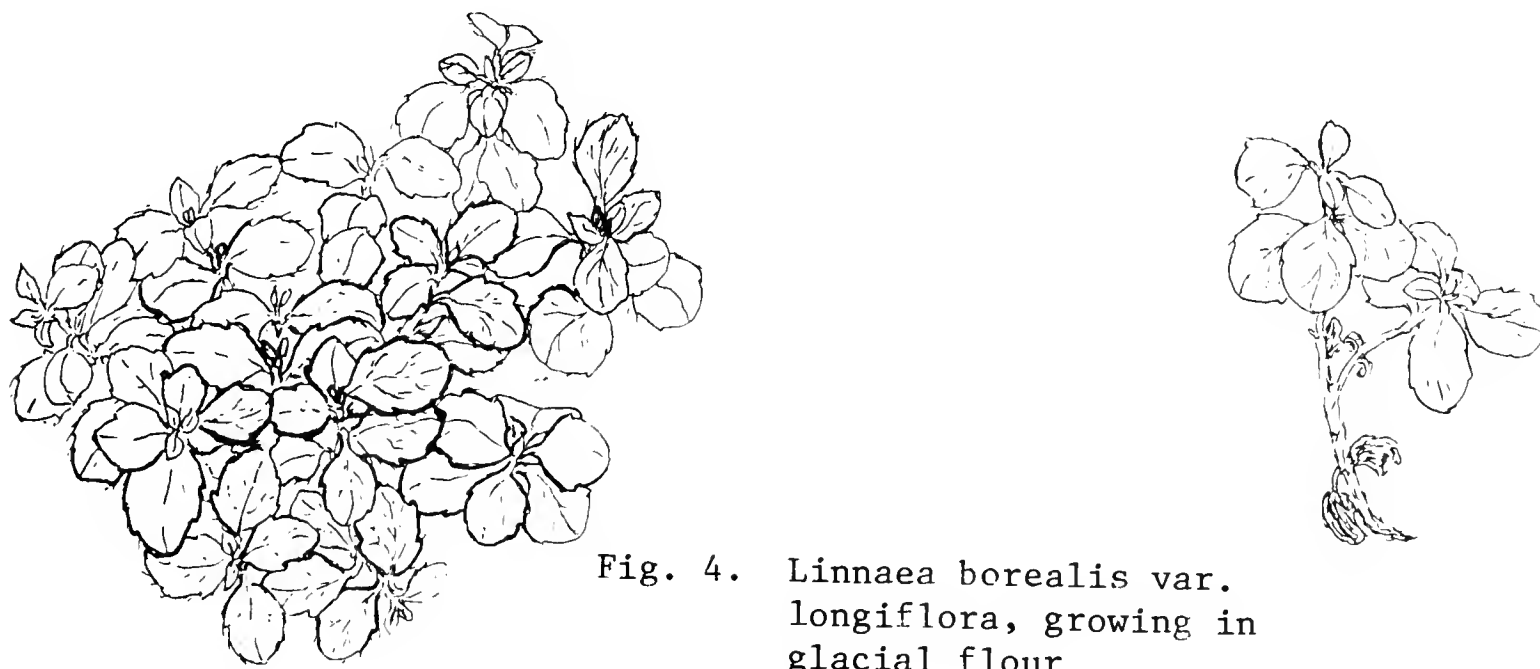


Fig. 4. *Linnaea borealis* var. *longiflora*, growing in glacial flour

*Quoted from Washington State Place Names, by James W. Phillips, by permission of the University of Washington Press.

Seed - Natures' Way

Mareen Kruckeberg, Seattle, Washington

Seed is nature's way of propagating plants, and as we look around us we can see that it is a very successful method. It provides variation, as each seedling is a little different. This winter, experience the thrill of growing from seed by participating in our N.O.H.S. Seed Exchange.

A single container that can be used and then discarded is the styrofoam coffee cup with a hole in the bottom for drainage. An ice pick is perfect for the job. A mixture of 1/3 soil or compost, 1/3 perlite or sand and 1/3 peat moss is a good medium for most seed. Mix well. Fill the cup to within a half inch of the top and add a thin layer of milled sphagnum. Place the seed on this and cover with more sphagnum. Then put a thin layer of grit over the top. This helps prevent the growth of liverwort and mosses. It also helps to keep the seed in place when watering. After seed is sown, soak the container in a pan of water until the grit on top is dampened. Place it outdoors in an area protected from animals and from excessive rain, but is exposed to frost and snow. Most seed will germinate in the spring, but the ones that do not should be held another year. Some seed normally takes two years to germinate. In some cases, if the right combination of temperature and light along with other factors were not right the seed may have remained dormant, but would respond the next season. If you do hold a container over, remember that it must be watered just as the rest of your garden. The fun of growing seed is worth being patient.

This is just one of many methods, but the one that I have found the easiest and most successful. Look to future issues of the journal for articles on raising specialized plants from seed, such as alpenes and ericaceous shrubs.

Seed Exchange 1982 - 83

LAST CHANCE: for your contribution to the N.O.H.S. seed exchange.

Take another look around your garden. What can you find? Some rhodies, iris, gautherias, vacciniums, may still be waiting for you. Especially look for the unusual seed to share and also our natives. Please label carefully after cleaning and put into small dry envelopes. Mark mailing envelopes "Hand Cancel" please. Then mail by January 8th to:

Mrs. Phil Duryee, Chairman
1115 41st East
Seattle, Washington 98112

NOTE: If you know of seed that will ripen and be available after our closing date, please let us know so that we can include it on our exchange list. Collect as soon thereafter as possible, clean and send on to us. Think of the fun and surprises in growing nonavailable plants from seed, and do let us know what happens--successes and problems.

Book Reviews

BOOK REVIEW: GARDENING WITH NATIVE PLANTS OF THE PACIFIC NORTHWEST. 1982. Arthur R. Kruckeberg. University of Washington Press, Seattle. 264 pp., illustrated, glossary, bibliography, index. ISBN 0-925-05893-6. \$24.95.

Review by Roy L. Taylor, Director, Botanical Garden, The University of British Columbia, Vancouver, B.C., Canada.

For the first time, a truly well-documented and accurate publication on the use of native plants of the Pacific Northwest is now available. It is indeed a welcome publication and will have wide appeal to the many amateurs and professional nurserymen who have been interested in the wide array of potentially useful native plants of this region.

The author is well-acquainted with the diversity of vascular plants of the region. An added bonus is the skillful addition of information on propagation techniques and hints for growing-on that probably have some of their origins with the author's wife, Mareen, who is a skilled plantswoman in her own right. The combination of scientific and horticultural information has produced an interesting book that has a depth of knowledge about the plants that is usually lacking in most propagation books produced by other specialists. There are plenty of the latter general publications available in various forms, but few have the depth and integrity of this present volume.

The book is divided into four chapters, has three appendices, a glossary, an interesting seven-page section on the meaning and derivation of plant names, a selected bibliography and an index. I am pleased to see the special appendix concerned with "Collecting in the Wild". Too often amateurs and professionals take for granted their right to collect plants anywhere and this attitude has unfortunately produced too many poor friendships. Dr. Kruckeberg's recommendations should be read by all and heeded. It is especially appropriate advice as our natural resources are under greater stress by man than ever before and the pressure will continue to grow in the future.

General information is contained in Chapter 1, with discussions about the natural environments in the Pacific Northwest providing a broad overview of the area in which the plants contained in this book occur. This section is followed by a discussion of garden and landscape use. I was pleased to see reference made to the potential of native plants in public authority programs. A final section discusses propagation of native plants.

The remainder of the book is devoted to detailed descriptions of the plants arranged in three broad classifications: native ornamental trees, native ornamental shrubs, and native ornamental herbaceous perennials. Each of the plants discussed in these chapters is arranged alphabetically by botanical name within each section in the chapter. However, the user should be warned that each entry is highlighted by the common name(s) for the plants found within that particular genus. This may lead to some confusion for the reader who doesn't remember that the order is by botanical name, thus becoming confused by the random arrangement of the common name entries.

I think this is A.R.K.'s sneaky way of making botanists out of all plant enthusiasts! I hope he is more successful than I have been!

The discussion about the individual plants has much to be applauded. I found that for the first time, an accurate description of the woody penstemons is made and they are recognized as evergreen and woody. Similar new or first published information is found about other genera in the book.

The illustrations, both line drawings and photographs, either black and white or color greatly enhance the value of the book. I suppose it would have been ideal to have color photographs of all the plants discussed, but the cost would have been prohibitive. The author is to be congratulated on the care taken in the selection of illustrations.

I have no hesitation in highly recommending this book to any amateur or professional botanist or horticulturist interested in learning more about the potentiality of the native plants of the Pacific Northwest. It is reasonably priced, sturdily bound and most readable. Where else can you have a first-class professional publication about plants for \$24.95 in today's burgeoning book market. It is good to have a book that is so appealing to the general public produced by a well-known authority. It is a must for the library of the naturalist and horticulturist of this region!

BOOK REVIEW: ALASKA TREES AND SHRUBS by Leslie A. Viereck and Elbert L. Little, Jr., 265 p. U.S. Department of Agriculture - Forest Service. 1972. Agriculture Handbook No. 410. \$12.00.

"Identification of the trees and shrubs of Alaska is not difficult, because relatively few kinds of trees and shrubs grow in far northern lands. Most states contain within their boundaries at least twice as many native tree species as does Alaska. The number seems relatively less, also, because some tree species generally are shrubby and many are not widely distributed within the state."

So say the authors, right on page two of this volume. "Not difficult?" Well, probably not, if you have a good guidebook. Otherwise, sorting out which is the particular woody Alaskan one is staring at, from among the 128 possibilities the authors list can be a formidable task. There are 29 willows, seven vacciniums, for example.

Fortunately, this is a good guidebook, available at the bargain price of \$12 (hardbound) at the Government Bookstore in room 194 of the new Seattle Federal Courthouse building--enter from the First Avenue side. If you are not wealthy enough to own Hulten's massive Flora of Alaska, then this is indeed the book. In many ways, it covers its limited subject matter far more thoroughly than Hulten does.

There is a high-quality drawing of every one of the 128 plants shown, on the order of the drawings in Hitchcock. Always a typical leaf will be shown with careful attention to the morphological features on that leaf that help separate it in identification from leaves of related species. Most of the drawings are superb, the rest are well above the average found in such

books. Unfortunately, the Forest Service demonstrates here, as elsewhere, its disregard for the faceless people who toil for its pay, and so the illustrators (who, by virtue of the excellence of their work, merit recognition somewhat comparable to that given the authors) are sort of lumped together in a pageful of attributions, with poor separation of which did what. The cover illustration, by W.D. Berry, is a nice surprise in the 1972 setting when government publications were seemingly given extra prestige if they looked suitably dull. Not only are the 128 illustrations delightful, they are "public domain," exempt from copyright except for those listed on page five as having been used with permission from copyrighted publications, including a series from Hitchcock et al.

Both summer and winter keys to identifying the plants are included, with the summer ones based primarily on leaf characteristics, so if you miss the sometimes fleeting Alaska blooming period or lack fruits, you still can figure out your plant. Excellent maps show the range of each species, and the whole state is covered. The text is wonderfully precise without being obscure or show-off scientific, so the book is usable by the average person interested in woody plants.

These authors are well qualified and have done their work thoroughly. There is a nice discussion of Alaskan vegetation, using the three large divisions of coastal forests, interior forests, and tundra, with some subdivision of the three groups and lists of typical plants to be expected in each.

The plant-hunting frontiers of the world keep shrinking. Alaska becomes more important as this happens. Its plant exploration is quite incomplete. If you are headed for Alaska, whether you plan to join in serious botanizing or just want to be less ignorant of what you are seeing, this is a most useful book to own.

Until very recently, because of inept skills at publicizing what it published, the U.S. Government doomed its own books from reaching wider readership. This 10-year old book has been trapped in these icefloes of a long winter, and it is time to release it for spring reading.

Marvin Black

In Loving Memory

Isabel Pierce
Kemper Freeman



Tidbits

by Ladybug



NOHS FALL PLANT SALE RAFFLE

Winners: Jo Hotson Camelia - 'Showa-No-Sakae'
 M. MacLeran Bonsai - R. 'Treasure'
 Marian Sullivan R. 'Oder Wright' x 'Honeymoon'



A rumor worth trying: Use furnace duct tape to seal pruning wounds. It prevents bleeding and will drop off after the wound has healed. Let us hope it is a successful method for *Acer palmatum* because this tree is very susceptible to fungi which attacks the tree internally from pruning and starts an irreversible pattern of slow mortality.

Betty Carey Miller, Seattle, Washington



A fact also worth trying as an effective "reminder": As you stroll through your garden, carry a roll or rolls of different brightly colored, weightless and weatherproof flagging tape* (available in some hardware stores). Easy to tear a length and tie onto a branch to remind you that the plant needs to be moved, or on a branch that needs pruning, or best of all--tie a bright red streamer on your pruning shears. You will not lose them!

You can also jot down notes on the tape with a permanent pen and tie it somewhere on the site of your ideas, and you will not forget them.

Betty Carey Miller, Seattle, Washington

* Forestry and engineering supplies



Still another for winter gardening: Slip plastic bags over your socks before putting on your shoes. Keeps your feet warm and dry. Plastic covers from new or laundered men's shirts are ideal.

Betty Carey Miller, Seattle, Washington



THE GARDENER'S GAZETTE, 1838 COLOSSAL.--Col. Porter, the giant, is on a tour to Europe, to "astonish the natives" of the old world with a portion of a mammoth sycamore tree, raised, like himself, in "old Kentucky," which tree was seventy-four feet in circumference! It is said that it was once used as a boarding house and afterwards as a barn. February 24, 1838

Dennis Thompson, Seattle, Washington



A revised and updated, enlarged version of Trees and Shrubs for Pacific Northwest Gardens is in the works. Commissioned by Timber Press, it will be the first revision in the landmark work written in 1943 by John A. Grant and Carol L. Grant. Authors of the revised and enlarged work, which will continue to carry the Grants' names, are Joseph A. Witt, curator of plant collections at the Washington Park Arboretum, Brian O. Mulligan, former director of the Arboretum, and Marvin E. Black, Seattle city arborist.



Plastic pots: In potting up plants for our NOHS sales, we find it takes a tremendous amount of soil, particularly discouraging when the size pot required is far too deep for our purposes. Solution...cut them down to size with band saw or tin snips.

Sylvia Duryee, Seattle, Washington



Liquinox Start: It has only been in recent years that I have discovered the value of Liquinox Start in transplanting rooted cuttings, seedlings, collected plants or mail order plants that often are sent bare rooted or nearly so. Follow the directions on the bottle, water well with the solution frequently the first two or three weeks. It is a root stimulant that absorbs the shock of transplanting.

Sallie D. Allen, Seattle, Washington



Lewisia tweedyi: We had always thought that it was necessary to have freshly collected seed of *Lewisia tweedyi* to have successful germination. Rather than throw out a year-old packet, I planted it in my special soil mix. Nothing happened over the following two winters, then the seed began to sprout, sometimes a single seedling a month apart. The result...nine strong healthy plants that will probably bloom this year.

Special Seed Mix: Two parts loam, one part each of leafmold, sharp sand, crushed pot, crushed tufa, (the size of the particles of the last two ingredients should be almost that of turnip seed.) Taken from Propagation of Alpines, L. D. Hills.

Sylvia Duryee, Seattle, Washington



DON'T FORGET! The deadline for the NOHS Seed Exchange is January 8th. Take a winter tour of the garden and collect the late ripening seed that seldom appear on other seed distribution lists. See page 78 for further Seed Exchange information.

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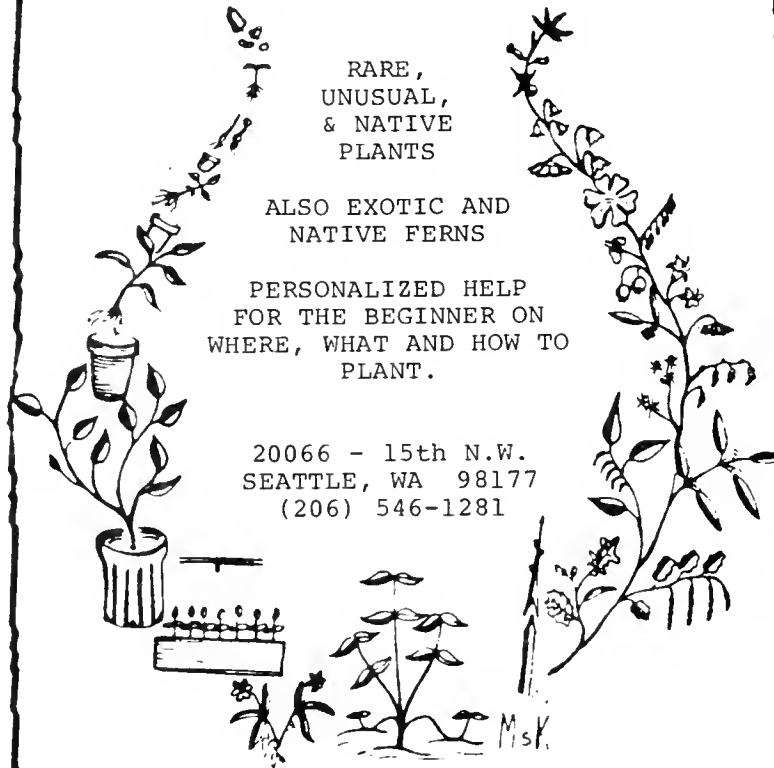
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